

CONSIDERATIONS

ON THE MEANS OF PREVENTING

THE COMMUNICATION

OF

PESTILENTIAL CONTAGION.

[Price 1s. 6d.]

FOR THE YEAR 1845

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CONSIDERATIONS

ON THE MEANS OF PREVENTING
THE COMMUNICATION
OF
PESTILENTIAL CONTAGION,

AND

OF ERADICATING IT IN INFECTED PLACES.

By WILLIAM BROWNRIGG, M. D. F. R. S. k



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CONSIDERATIONS

ON THE MEANS OF PREVENTING

THE COMMUNICATION

OF CONTAGIOUS

FEVER



By J. G. D. R. S.

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CONSIDERATIONS, &c.

HIS Majesty, ever attentive to the welfare of his people, having thought fit to take such precautions as seemed necessary for preventing the pestilential contagion being introduced into these kingdoms, from some of the distant parts of Europe; and having, since, been pleased to declare from the Throne, that if, from an alteration of circumstances, it should, at any time, be found, that farther provisions will be wanted for securing this country against the visitation of that fatal calamity, he did not doubt of the ready concurrence of his Parliament for so salutary a purpose: and the Right Honourable the Lords Spiritual and Temporal, and the Commons, in parliament assembled, having, respectively, declared their readiness to concur in such measures as should be found necessary for their preservation, from so great a calamity: it, therefore, seems to be the sense of his Majesty, and of the whole British Legislature, that, at this time, it may be necessary to take the laws respecting this contagion under their considera-

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tion, that such additions and amendments may be made to them, as shall be required to render them more perfect, and fitter to answer the ends proposed. And as, in the course of my practice, I have had frequent occasions to lament the great destruction of mankind by contagious diseases; and, from thence, been led to consider the means with which we are provided for preventing or lessening their fatal effects, and even for eradicating several of them, if care and industry are not wanting; and having, with this view, diligently collected the best information that I could procure, concerning the nature of pestilential contagion, and the means of preventing it from being propagated; I therefore, on the present occasion, offer to the consideration of the public a few observations, with proper conclusions from them deduced, on this important subject: happy, if they shall, at any time, be found useful in stopping the progress of this disease, or in exciting others to point out more effectual means for answering the same design.

For preventing this contagion being introduced into these kingdoms, the laws of Quarantine have long been established [1]; and, by his Majesty's order, are now in full force. These, in the year 1710, were taken into consideration, and further enlarged and enforced; and, since that time, have received

[1] The Venetians seem to have been the first who established Quarantines in their dominions, about the year 1484, soon after the Turks became their neighbours in Europe: the constant intercourse which they maintained with those powerful neighbours, either in war, or by commerce, rendering it necessary for them to take this, and other precautions, against the introduction of this contagion into their country.

great alterations and amendments. [2]; and yet, notwithstanding all the care of the legislature, may possibly still receive further improvements, whensoever a revival of them shall be thought necessary [3].

[2] The late Doctor Mead, in his discourse on the plague, proposed many excellent rules respecting the method of performing Quarantine, which in the Act of 26th Geo. II. have, in general, been adopted. But, in that discourse, he hath taken no notice of the great benefits of Bills of Health, as a preservative against the importation of this disease; although they strike at the root of the evil; and, under proper regulations, may in many cases render the performance of Quarantine unnecessary. He hath collected several useful observations concerning the nature of this contagion; but the methods proposed by him for removing it seem inadequate to that end. Since that justly celebrated physician wrote, we have also been made acquainted with some properties of this contagion, which direct to the means of preventing it from spreading, and of removing it from infected places. All which render a further publication on this subject necessary. I may add, that the labours of our latest medical writers (particularly of Sir John Pringle, in his Treatise on the Jail-fever, and his other excellent works; and of Doctor Lind, in several of his valuable publications) assist us in forming a true judgment of the nature of contagion in general; and that further lights are daily thrown on this subject, by the practice of inoculation; all which enable us to point out, with more precision, an effectual preservative method against that of the plague. Permit me further to add, that my views in this publication are not wholly confined to one country: I would, willingly, extend them to all mankind. And if, on the present, or any future occasion, any stop should be put to the progress of this disease by the means here pointed out, the danger of its spreading to distant parts will thereby be lessened, and the same means may afterwards be put in practice, with more certain hopes of success, whensoever this disease shall appear, either in this, or in any other country.

[3] One instance I shall here beg leave to mention, wherein these laws may require some amendment. By the said Act

The establishment of bills of health [4], to be produced by all commanders of ships on their arrival from places frequently infected with the plague, or

(26 Geo. II.) some provision is made against the practices of clandestine traders, at such times as any part of this or of any of the neighbouring kingdoms shall happen to be infected with the plague. But the penalties imposed on them by this act, are not much greater than those to which they subject themselves, by their illicit practices, at all other times; although it is well known that contagion is often secretly introduced by these clandestine traders; as was, not long ago, experienced at Reggio in Calabria; and, very lately, the contagious distemper among the horned cattle was believed to be thus introduced into Scotland; but, by the wise and vigorous measures then taken, by his Majesty in Council, an immediate stop was there put to its farther progress.

From the same act, it appears to have been the sense of the Legislature, that, agreeable to the practice of other nations, it would be expedient to erect Lazarettos, for the performance of Quarantine; and some provision was made in this act for the abovementioned purpose. But nothing further has yet been done in this business. If four or five such Lazarettos were erected in different parts of Great Britain and Ireland, at, or near, those places where our ships usually make land, in their homeward passages from the Mediterranean, and from the Baltic, Quarantine might most conveniently and effectually be performed at such places; and with greater safety to the public than by the methods now in use. Moreover, such Lazarettos would be eagerly sought out by the crews of the ships actually visited by the plague; who, for want of such places of refuge, now threaten society with that destruction to which they themselves are devoted. On many occasions, those Lazarettos might also be useful to crews of his Majesty's ships of war, and of other vessels infected with the Jail-fever, and other contagious diseases; which, for want of such places of retreat, are often communicated to the inhabitants of the places where such infected crews are received.

[4] It does not appear that bills of health have been established in this kingdom by any express law; but the use of them seems rather to have been introduced by the general consent of that

that are in danger of being therewith infected, seems well calculated to answer the end proposed: such bills having been found highly instrumental in preserving this nation, for more than a hundred years past, from this disease, with which, before that time, it was frequently visited. These bills, or manifests, are constantly given, by several Italian states, to such ships as sail from their ports; and are there required of all vessels that arrive at their ports, from most places situated on any of the seas within the straits of Gibraltar.

In other parts of Europe, whensoever danger is apprehended from pestilential contagion, these bills are also required from all ships, by which it is suspected that this contagion may be conveyed; as, at present, from all ships that arrive, in this country, from the Baltic. They are also constantly given by the British consuls, in every part of the Turkish dominions, and of those of the states of Barbary, to

the Christian states of Europe; who, by a kind of confederacy against this distemper, united in this measure, to prevent it from spreading into their respective dominions. But, as the Mahometan princes would take no precautions against this disease, the consuls of the other European nations, residing in the dominions of those princes, were therefore instructed to grant bills of health to the ships of the nations to which they belonged, that should happen to touch at the ports where they resided. This last regulation of granting bills of health by consuls (if I am rightly informed) only took place here, after the plague had been brought from Smyrna to Amsterdam, in the year 1664; and from Amsterdam, or some other part of Holland, to London, about the beginning of the year 1665. However this may be, it is certain that the establishment of these bills hath proved highly beneficial in checking the progress of the distemper.

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all ships of their nation that sail from the ports where they reside. In these bills, are usually inserted the time and place where granted; the name of the vessel and its commander, and of the merchants by whom it was loaded; the kinds of goods which it contains; the place to which it is bound, together with the number of mariners, and passengers embarked therein; with a certificate, or testimonial, that all so embarked were in good health; and the place where such bill was given, free from contagion: and on the arrival of such vessel in any port of this kingdom, these bills are examined by the proper officer of the customs; and neither the vessel is suffered to be unloaden, nor its crew to come on shore, without performance of Quarantine, or other necessary precautions taken, whensoever there appears the least cause to suspect that this contagion may be communicated from such vessel.

Thus, by the wisdom of Legislature, a double guard hath been provided against this dreaded disease. First, by the establishment of bills of health, as a security, at all times, against the exportation of its contagion from those places that are frequently infected therewith, or from other places where danger is apprehended from it. And, secondly, by the establishment of Quarantine, as a security against its importation into these kingdoms, on the nearer approach of danger; or whensoever the diligence of those, who have in charge to watch, in this particular, over the public safety in foreign parts, hath by any means been evaded:

The first of these provisions appears to be our greater security against this contagion, and may possibly

possibly be rendered yet more effectual [5], if instructions be given to the British consuls, residing in places that are frequently infected with this disease,

[5] As a rational preservatory method against infection from the plague must be founded on a knowledge of the nature of its contagion, or the manner in which it is conveyed, and of the extent of its operations; that a judgment may therefore be formed of the means here pointed out, for preventing the spreading of this contagion, it appears necessary to subjoin to these considerations, a brief account of several of its properties, and of some of its operations on the human body.

Those minute particles of matter, which, passing from a person affected with the plague, produce the same disease in another person, by whom they are received, are called pestilential contagion.

And that alteration in the body which is produced by contagion, in bringing on this distemper, is called infection.

And, with respect to this disease, those persons are commonly called sound, who are free from its contagion. And those who are capable of communicating it to others, are commonly called infected persons; and are so esteemed by our laws. And all places where this contagion is lodged are, in like manner, called infected places.

This contagion (like that of the small pox, and several other diseases) appears to be a putrid substance, of a particular kind, and acts on the human body, as a ferment, converting the animal fluids, by a kind of intestine motion, into its own nature. Thus, by a continual rotation from cause to effect, this contagion produces infection; infection the disease; and the disease again, contagion: and thus, the distemper is perpetuated in a continued succession from one subject to another; as fire is kept alive by its proper subject, or fuel.

The contagion, so generated, is either emitted from the bodies of the diseased in subtil effluvia, insensibly conveyed through the air, or else it resides in the fluid parts of their bodies; as in the blood, or in those humours that are secreted from it, as in the bile, or in the various excretions of the human body; and especially in the purulent and sanious discharges peculiar to this disease. The contagious effluvia, so emitted, may, with

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to send constant intelligence to proper officers appointed here to receive the same, of the state of health in those places, and of all irregular proceedings of

the air, insinuate themselves into soft and porous bodies, such as cotton, wool, feathers, camels hair, flax, &c. when they happen to be deposited in close rooms near to the sick, especially before they are closely packed up; and to such merchandize this contagion will strongly adhere, and may be conveyed with them to a greater distance; and an opinion has generally prevailed, that it is most frequently communicated by means of such merchandize. Although this opinion does not appear to be supported by well-attested facts, it is reasonable to suppose that such kinds of merchandize are commonly packed up, in the countries where they are produced, at a distance from infected places, and are liable to receive contagion only by such accidents as rarely happens; and, when they have so received it, may require to be in close contact with the body for a considerable time, before they can produce infection. But there is greater reason to apprehend danger from that contagion which is mixed with the various fluids of the body, and with its excretions and discharges, as before related. For it is found by experience, that the most subtle active particles of putrid contagion may be so enveloped in the glutinous parts which most of those fluids contain, that, with them, they may be reduced into a dry form; and in that state may long continue without change, so as to be carried to the remotest parts of the world, and there exert their peculiar effects, when applied to the human body, and loosened by moisture, and rendered active by heat. We have many proofs of contagion thus detained in cloaths, and in other things applied to the bodies of the sick; which, when from them applied to the bodies of the sound, can scarce fail of communicating the disease. Next therefore to the bodies of those who labour, or have lately laboured, under this disease, their beds, bedcloaths, wearing apparel, utensils, surgical dressings, and every thing else that is applied to them, or that they touch, or handle, are most apt to receive, and to retain, this contagion; and ought most carefully to be attended to in the performance of Quarantine; as also by the British consuls, in their inquiries into the state of those ships, and their cargoes, for which bills of health are demanded.

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any British ships, or those of other nations, whereby danger may arise of the disease being propagated to this, or to the neighbouring kingdoms; and if those

Among mercantile commodities, hair taken from the bodies of the infected, may, possibly, be sometimes imported: also rags, that have been part of the apparel of the sick, or otherwise used about them. The importation of these, from places to which it is possible they may be brought in this infected state, hath therefore, by his Majesty's order, at this time, been wisely prohibited. One of our antient writers in husbandry informs us, that the inhabitants of Hatcher, a village in Hertfordshire, had frequently been infected with the plague, by rags which they used as a manure to their ground. See a Treatise on this subject, by Speed, published in 1656.

Among the articles of trade, there are also various manufactures, which seem more liable to receive and convey this contagion than cotton and the other raw materials beforementioned. Turkey carpets may have been deposited in infected houses; or wrought by persons just recovering from the plague. Coarse linens may, possibly, sometimes be wove by persons infected with this disease; and may long retain the contagion. And as such linens are worn in our colonies, and in other countries, without bleaching, or washing; such cloaths, when imbued with contagion, can scarce fail of producing infection, in those who apply them to their warm bodies. Needle-work, and embroidery, may, for the above reasons, be sometimes ranked among these dangerous articles of commerce. And though such accidents may be rare, yet contagion hath sometimes been conveyed in those kinds of work. The contagion of the small-pox, I am well informed, was, about thirty years ago, conveyed from London to Virginia in a band-box. A young lady, of the town of York, in that province, was unexpectedly seized with that disease, of which she died; and from her, it was communicated to about two hundred persons; but was prevented from spreading farther, by the flight of the inhabitants from the neighbouring places. No one could, at the first, form any conjecture how the disease had been communicated to this lady; as they had been enabled to do, on similar occasions. At length it appeared, that some attire for the head and neck had been

consuls are further directed to make particular inquiry, whether any of the crew of such masters of ships as shall apply to them for bills of health, have, within a certain time, laboured under this disease; and, where it shall appear that there has been any contagion among them, to take particular care that all bed-cloaths, wearing apparel, utensils, and other goods to which this contagion may adhere, be destroyed; and the ship thoroughly purified before any part of its cargo be taken into it. Also to make due inquiry whether any part of the merchandise, intended to be laden in the ship, hath been deposited in infected houses, that it may either be prohibited from being put on board, or may be duly aired before it is taken in [6]; and not to grant any bill of health

worn by this young lady, which she had received from London; where it had been made up by one that was recovering from the small-pox. The abovementioned articles of commerce may be ranked among those that are most liable to receive and to convey contagion. But no necessary precautions against its being introduced by any other kind of merchandise should be neglected. The *argumentum e tuto* ought here to take place in its full extent: for no great damage can arise from unnecessary precaution in an affair of such moment; but too great security therein may be attended with the most fatal consequences; first to individuals, and from them to the public.

[6] After the plague had raged two years at Aleppo (in 1761 and 1762) the British consul, so soon as it had there ceased for forty days, thought himself authorized to give the masters of ships, who had long waited to take in goods from that place, such bills of health, as are usually there called *clean bills*; on producing of which at the custom-houses in this kingdom, the merchandise brought from that place would be permitted to be landed without performance of Quarantine, or other precautions taken; although some of the silk, cotton, camels-hair, or other goods, of which the cargoes brought from Aleppo usually consist, might possibly have been long deposited there in infected
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until the commander of the ship, and all others concerned therein, or in its loading, have fully complied with his directions: and to report in his manifest or bill of health, what hath been done, in pursuance of his orders, in these, or any other particulars [7]. Moreover, as many masters of ships, and other seafaring people are not sufficiently acquainted with the laws and regulations made for preventing the communication of this disease; although, by transgressing those laws, they subject themselves to the severest penalties, and endanger the safety of the public [8]: may it not, therefore, be necessary that

houses; and if infected with that contagion, might have communicated it to the crew; or might retain it, for a much longer time than was required for conveying those goods into this kingdom. See Phil. Trans. Vol. LIII. Sect. xii.

[7] In the haste in which these considerations, through necessity, are drawn up, I have not an opportunity of making myself acquainted with the instructions usually given to the British consuls, respecting this contagion; therefore, hope I shall be pardoned, if I have here mentioned some particulars that are usually contained in those instructions; while others of great moment here recommended may not, I presume, have occurred to those who are intrusted with such affairs.

[8] There are certain signs by which this disease is known, and distinguished from all others; but these are not set forth in any act of parliament; although it is enacted, "that if the plague shall appear on board any ship to the northward of Cape Finisterre, the person having charge of such ship shall immediately proceed to the harbour of New Grimsby in the island of Scilly, and there remain with his vessel, until his Majesty's pleasure be known, and in case of disobedience shall be judged guilty of felony, and shall suffer death. And in case any ship or vessel shall come from any place visited with the plague, or have any person on board actually infected, and the person having charge of such ship shall conceal the same, he shall be adjudged guilty of felony, and suffer death,

a short abstract of those laws should be drawn up for their use ; together with instructions how to conduct themselves, with respect to those laws and regulations, at all times, and in all places ; and a description of those symptoms which distinguish this disease from all others. And that this abstract and instructions should be delivered (as it might at a trifling price) with the dispatches from our custom-houses, to every master of a ship bound to the Mediterranean, or to any other part from whence there shall be cause to suspect that this contagion may be brought ; to the end that all who sail to such parts, may not be ignorant of their duty in a matter wherein their welfare, and that of the public so much depends.

Besides the provisions before-mentioned, it was also necessary that further provisions should be made against the communication of this disease from places where it should unexpectedly appear ; especially when those places are so situated, that there is reason to fear it may be readily conveyed from them into these kingdoms. In such cases, therefore, a power is placed in the crown, timely, to provide against the

“ as in cases of felony, without benefit of the clergy.” Many other severe penalties are imposed on masters of ships and seamen transgressing these laws. Every master of a ship, therefore, out of regard to the public safety, as well as his own, should be enabled to judge whether any of his crew are affected with this disease ; and should be acquainted with the laws relating thereto, that he may be able to conform himself to them. The laws respecting Quarantine, and indeed directed to be read in churches, when by his Majesty's order in council they are in force ; but, for want of due attention, this direction is seldom observed.

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danger, by a total prohibition of commerce, and of all communication with places so infected, or that are near to them; as also of laying restraints on the trade with ports that are more remote from the infected places, so as to prevent the importation of such kinds of merchandise from them as are most susceptible of contagion, when there is cause to suspect that such merchandise may, possibly, be conveyed to those ports from the infected places. Powers are also vested in the crown, for destroying ships and goods that are infected with this contagion. And such wisdom and circumspection hath been used by our Sovereigns in the exercise of these powers, in the course of the present century, that the British dominions, during that time, have been happily preserved from this calamity; while Italy, France, Germany, Poland, Denmark, Sicily, and other parts of Europe, have experienced its fatal effects.

Besides the provisions before-mentioned for preventing the communication of pestilential contagion into these kingdoms, other provisions are also required, for preserving the inhabitants of infected places from this disease, for preventing its communication from one place to another, and for totally eradicating it, when, by any accident, it shall happen to be introduced into these kingdoms. The laws now in being have, from fatal experience on former occasions, been found insufficient for answering these salutary purposes [9]; although there is reason to

[9] The statute 1 Jac. I. (in the year 1603) intituled, "An act for the charitable relief of persons infected with the plague," which is founded on more antient statutes, appears to be the only one now in force, for the abovementioned purposes. By this act it is ordained, that any person or persons

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believe that these most desirable ends may be obtained by other means, when timely carried into execution.

It hath been found by experience, that the plague (as well as many other diseases) is only produced in this country by contagion; and that it may be prevented from spreading, by entirely cutting off all communication between those places, persons, and things, that are therewith infected, and those that are free from its contagion [10].

infected, or being, or dwelling in any infected house, who shall, by the proper magistrate, be commanded to keep his or their house, for avoiding of further infection; and shall, notwithstanding, wilfully and contemptuously disobey such direction, that then it shall be lawful for such keepers or watchmen as shall be appointed to see them kept in, with violence to enforce them to keep their houses; and if any hurt come, by such inforcement, to such disobedient persons, that then the said keepers, watchmen, and any other their assistants, shall not be impeached therefore. And if any infected person, as aforesaid, so commanded to keep his house, shall, contrary to such commandment, wilfully and contemptuously go abroad, and shall converse in company, having any infectious sore upon him uncured, that then, such person or persons shall be taken, deemed and adjudged as a felon, and suffer pains of death as in cases of felony. By the same act, among other things, power is given to the magistrates to tax the inhabitants of infected places; and, in some cases of the country within five miles round, for the relief and support of the sick so shut up. *N. B.* The allowance given by the city of London, in the year 1665, was eight-pence per day to each person so shut up. The execution of this act is committed to the mayor, bailiffs, and other head officers, and the justices of peace of cities, boroughs, and towns corporate; who are impowered to appoint under them, searchers, watchmen, examiners, keepers, and buriers for the persons and places infected.

[10] These important axioms seem to hold true in all other parts of the world as well as in Great Britain. Timoni, and These

These important truths were long ago known to the British Legislature; at least were, thereby, admitted to hold generally true; since the laws of Qua-

other physicians who have practised at Constantinople, assure us, that this disease is constantly brought to that city from Egypt; and others affirm that it is also brought from thence to Smyrna, Aleppo, and to other parts of the Turkish dominions: although Egypt, which is now esteemed the grand seminary of pestilential contagion, if we may give credit to Herodotus, was in his time a healthy country. And this salubrity of Egypt he attributes to the temperature of its air, which was not subject to any great variations; in which respect, the air of that country has most probably continued much the same to the present time. There is, however, reason to believe that the salubrity of Egypt was, in those early times, in part, promoted by the laws which that wise and learned people had established for preventing the spreading of contagious diseases. For we may gather, from the same author, that the Egyptians, by their laws, guarded against infection from the leprosy; and on the same principles, would, as occasion required, provide against the communication of other contagious diseases. However this may be, there does not seem to be any thing peculiar in the air or climate of Egypt, that is more favourable to the generation of the plague there, than in many other countries where it is unknown. There are many parts of Africa and America, which, in common with Egypt, are subject to inundations; where the climate is extremely hot; and the ground marshy, and covered with wood; and in those countries (naturally, more unwholesome than Egypt) the plague, so far as we can learn, is not generated without contagion; on the contrary, in most of those countries, it is wholly unknown. Moreover, we are assured by Prosper Alpinus, that, near two hundred years ago, when he practised physick in Egypt, the plague was almost constantly brought thither by contagion; either from Greece, or from Syria, or the neighbouring parts of Africa; to all which countries it is now said to be carried from Egypt. He indeed admits (agreeably to the common opinion then received) that sometimes, though rarely, it was there produced without contagion; but of this he brings no proof. And there seems reason to suspect, that, in cases where this disease

rantine, the establishment of bills of health, and the antient practice of shutting up infected houses, must all have been founded on them. The last-mentioned

was not brought from other countries into Egypt, its contagion might have remained there concealed, until, by certain accidental causes, it was excited into action. Of this we have instances at Constantinople, where it has been observed to remain unactive, in infected houses, during the winter; and again to produce the disease in the following spring, in subjects then disposed, by the warmth of the season, to receive it. The same has happened in England, and in many other countries. And the contagion of the jail-fever I have, more than once, observed, in like manner, to lie, as it were, dormant during the winter, and again to produce that distemper in the summer following. But, I have not, in medical history, met with any well-authenticated account of the plague being generated without contagion. It is however evident, that, at some period of time, this disease must somewhere have been produced without the aid of contagion; and may again be so produced; but this, most probably, by such a combination of causes, as very rarely occurs. And it is easy to account how pestilential contagion (in like manner with that of the small-pox, and of various other distempers) if at the first it should only have been conceived and brought forth in one individual, may have been preserved in the world, through many succeeding ages, by a continued propagation from one subject to another. The same Prosper Alpinus further informs us, that, according to the vulgar notion which prevailed in Egypt, the plague, in his time, only appeared there about once in seven years. But we find that this terrible scourge now visits that country every year; and appears much more frequently than heretofore in all other parts of the Ottoman empire; owing, perhaps, in some measure, to the increase of commerce; but chiefly, to the principle of predestination that prevails among those of the Mahometan religion, and prevents them from using any means of guarding against its contagion. While, on the contrary, by means of a better-regulated police, in this particular, Great-Britain, and most other countries of Europe, are now more rarely visited with this calamity than heretofore.

practice

practice for preventing the spreading of this disease, appears therefore to have been established on good principles; although, after the manner in which it was carried into execution, when the metropolis was last visited with this calamity, it was found to be attended rather with damage, than advantage to the public; and with such cruelties to those families seized with the distemper, that it has been condemned by all who, at that time, or since, have written on the subject [11]; and will scarce again be brought into use.

[11] As by Sydenham, Hodges, and Mead. See the arguments for and against this practice, stated by Hodges, in his account of the plague which raged at London in the year 1665.

He tells us, among other things, that almost every one in the families so shut up, perished, one after another, by the disease; and an opinion universally prevailed that those so shut up, were doomed to certain death; for which reason, those families that were infected with the disease, concealed it by every means in their power; and many of them, on whom it did not appear, privately withdrew themselves to other places, carrying the contagion with them. And he is of opinion, that the disease, which had appeared on one or two in Westminster, about Christmas, was, by the flight of some from the infected families, conveyed into the city; where, after a severe frost of three months continuance, it broke out in the April following; and he observes that no care was there taken to shut up the infected houses, until the distemper had spread so far, that it could not be stopped by that means. He thinks, that if the disease should appear, in any future time, it would be more advisable, immediately, to separate the sick from the sound, in infected families; to send the sound to proper houses provided for them, and the sick to Pest-houses, or Hospitals, appropriated to that disease; of which there were then many in London and Westminster. This method of treatment has since been recommended by others; and in the year 1720, was even countenanced by the Legislature; but the clause of the Act of Parliament by which it was then established, having greatly alarmed the

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The method since practised, in many parts of Europe, of preventing all communication between the places visited with the plague, and those that are free from its contagion, by means of lines carried round the infected places, and defended by a proper guard, hath been found to answer the end thereby proposed, wheresoever it hath been strictly carried into execution.

This method was successfully practised by the Elector of Hanover, when, in the year 1712, the plague was communicated from Hamburg, and other adjacent places, to several parts of his dominions [12]. The same was found successful in stopping the progress of the plague which broke out at Marseilles, in the year 1720; but, for want of due attention to the disease when it there first appeared, was not put in practice until it had spread, from thence, into the neighbouring provinces of France; where it raged, with great violence, in that and the succeeding year; but, by this method, was prevented from spreading into other parts of that kingdom [13].

capital, and being thought to be attended with the same inconveniencies with the law of 1 Jac. I. was for these and other wise reasons repealed, in the next session of parliament.

[12] Of the wise measures there taken to stop the progress of the disease, and to eradicate the contagion, see a relation annexed to the preface of doctor Mead's Discourse on the Plague, edition the 8th.

[13] This practice has the approbation of Montesquieu (*L'Esprit des Loix*, liv. xiv. chap. xi.) and may be supported on principles of humanity, and sound policy. It is said to have been first tried by the Duke of Tuscany, in the year 1711; when a contagious distemper among the horned cattle was brought from Dalmatia into the Venetian territories, in Italy: from whence it spread, in that and the two succeeding years.

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The same was practised, with better success, in the year 1743, by the king of the two Sicilies, at Messina, and at Reggio. And, more lately, when the plague broke out at Bosnia, the Venetians prevented the contagion being communicated to their subjects, in the adjacent provinces of Istria and Dalmatia, by lines of soldiers posted on their frontiers. Even the simple Hottentots, pursuing the dictates of nature, by the same means, effectually put a stop to the variolous contagion, which had been introduced into some parts of their territory; where it proved no less fatal than that of the plague in other countries [14].

Should therefore any part of these kingdoms, in any future time, be visited with this calamity; so soon as the fact shall have been fully ascertained, the public safety requires, that the place, or district, so visited, should immediately be surrounded with watchmen, or other proper guards, under the strictest discipline; and that intrenchments, or strong barricadoes, should with all expedition be formed round it, thereby to prevent all communication with the infected place; such only excepted as, by law, shall be ordained. How far, and under what regulations, a communication with the infected place ought to be kept up, the wisdom of the Legislature must direct. It will be sufficient here to remark, that all proper necessities for the relief and support of those so inclosed, should, under certain regulations, be permitted

through most parts of Europe; and through every part of Italy, except the Tuscan dominions; which were preserved from this contagion by lines of soldiers posted on the frontiers.

[14] Mead on the Small-pox.

to enter in, and that nothing should be suffered to pass out from the infected place.

Should this disease happen to break out in any large town or city, it will not be necessary that, for the security of the public, the whole town or city should thus be surrounded; unless it should appear that the contagion hath spread through every part of the place therewith visited; which scarce ever happens in large cities, in the beginning of a pestilence; on the contrary, as it is almost constantly propagated, at such times, only from a few persons, or from infected goods deposited in some particular place, its first appearance, in large cities is, most commonly, in one small part of them; from which it slowly proceeds to others, giving sufficient warning of its approach [15].

[15] Such was the first appearance of the plague, in London, in the year 1665, as described by Dr. Hodges; and that of Aleppo in 1761, as we are informed by the Rev. Mr. Dawes, Ph. Transactions, Vol. LIII.

In the year 1625, (when 35417 persons died in London, of the plague, according to the bills of mortality then published) only one is recorded in those bills, to have died of that disease, in any one week of the month of January, in the beginning of that year (according to the present calculation;) and only one parish is said to have been infected, during that month. In February, five are the most that are reported to have died in any one week; and two parishes the most that were infected. In March, eleven are the most that died in one week; and four parishes the most that were infected. In April, twenty-six, the greatest number that died in the same space of time; and eleven parishes, the most that were infected in any one week. The deaths, and infected parishes, increased pretty fast in May; and so on, in progression, till August; when between four and five thousand were cut off weekly, of this disease; and the parishes infected were a hundred and fourteen. In September, the infected parishes rose to one hundred and seventeen; but fewer then died of the distemper. One parish, however, within the bills of morta-

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In such cases, therefore, it would be altogether unnecessary, and highly improper, that such parts of a large city as may be several miles distant from the infected place should, therewith, be shut up: more especially, as it will here be shewn, that this contagion is not usually conveyed through the air, from one house to another contiguous thereto. But if proper measures are taken, the infection may be confined within the narrow limits of a street or lane; so as not to be, from thence, carried to other parts of the town, or city, that are free from it [16].

lity, remained free from infection during this whole year; a proof that this contagion is not far diffused from infected places, through the open air. In the succeeding year, 10400 persons are reported to have died in London, of the plague; and twelve parishes within the bills of mortality, to have remained free from contagion.

The progress of this disease, in the year 1665, was much the same in London, as in the year 1635. For although one person is reported, in the said bills, to have died of the plague at Christmas, immediately before the commencement of that year; and, according to Dr. Hodges, one, who was under his care, recovered from that disease, about the same time; and one more died of it in February, and two in April; yet only one parish, during all this time, is said to have been infected. And there is the greatest reason to believe, that if the communication with those streets, or lanes, in the parish of St. Giles, in which the plague then first appeared, had in due time been properly restrained, by the means here proposed, the distemper might have been confined within those narrow limits; and the capital, with half of the counties of England, might have been preserved from the terrible destruction that soon after ensued.

[16] The lines that have hitherto been formed, on account of pestilential diseases, have been executed with a very different design from those that are here proposed; as they were carried quite round the infected towns, in order to prevent the contagion being communicated from them to the adjacent country: where-

If the means here pointed out be timely carried into execution, and due provision made, that all dangerous and unnecessary communication with the

as, the primary intention of the lines here proposed is, to prevent the spreading of the contagion from those parts of a town that are therewith infected, to all its other parts that are free from contagion. Many weighty objections have indeed been brought against investing with those lines very large and populous cities, such as the metropolis of this kingdom; where it is thought the practice would be attended with more inconvenience than advantage to the public. For which reason, when, on the first alarm of danger from the plague at Marseilles, in the year 1720, powers had been intrusted with the Crown, for forming such lines round all infected places, on more mature deliberation, those powers were, in the succeeding year, revoked; it then appearing to Parliament, "that the execution of such powers and authorities might be very grievous to the subjects of this kingdom." However, the same objections cannot be against the seclusion of some small part of such large cities, for the preservation of all its other parts, and of the whole nation, from so dreadful a calamity. Every member of society, by the divine as well as by human laws, is restrained from the performance of such acts, as, without just cause or reason may endanger or destroy the life of any member of the society to which he belongs; or may endanger the well-being or existence of the whole society. Conformable to which principles, the Mosaic law ordains the separation of lepers from society. And by the execution of laws, formed on this divine plan, the leprosy has been rooted out of all the Christian states of Europe. The laws for secluding from society those that are infected with the plague are formed on the same reasons. It is just and reasonable, that those who, by their approach to others, may infect them with a mortal disease; or, by such approach to any one person, may endanger the lives of multitudes of their fellow citizens; it is, I say reasonable, just, and necessary, that such infected persons, while they continue in that unhappy state, should keep themselves separate from society; and, in case of neglect, or disobedience, should be severely punished. On the same reasons and necessity, infected places are ordered to be shut up; left
infected

infected place or district be entirely prevented, the inhabitants of all other parts of the town or city that are free from contagion may there dwell secure from the disease, especially when timely notice has been given of its first appearance, on which the public safety, in this case, much depends. And for this reason, all whose business it is to attend the sick, and all searchers of the dead, where such are appointed should be obliged, under the severest penalties, so soon as they shall observe any symptoms that resemble those of the true plague, with all secrecy and expedition, to give notice thereof to the officers appointed to receive such intelligence.

When this is done, and due precautions have been taken against the spreading of the contagion, by thus confining it within certain limits, the next care should be, to make provision for the necessities of those who are shut up in the infected place.

First, for their subsistence:

Secondly, for the cure of those who labour under the disease:

Thirdly, for preventing it from being propagated to the sound, confined within the infected place: and,

Fourthly, for eradicating the contagion.

those that are infected should spread the disease; and lest the ignorant and unwary should expose themselves, and the society, to the most imminent danger, by their intercourse with such infected places. But all objections to this method of treating infected places must vanish, if it can here be shewn that the sound, as well as the sick, shut up in the manner proposed, may there be put into a better situation, than if left at large to follow their inclinations, and no measures taken, by the public, for their preservation and relief.

First,

First, for the subsistence of the inhabitants of the infected place, all kinds of necessaries should be furnished, at the public expence [17] to those who will so receive them. Provisions may be supplied for present subsistence, until the number of people, so shut up, can be ascertained; and then, such a quantity of provisions may be procured, and distributed to each family, as will be sufficient for its support for a certain time. And these, and all other necessaries, may, with safety from contagion, be conveyed to some open place, either within, or adjoining to, the infected place; where they may be received by a proper guard, and from thence distributed to each house [18].

Secondly, for the cure of those who labour under the disease, it will doubtless be thought necessary that physicians, surgeons, and all proper attendants, should be provided at the public expence. In places where the plague has become epidemical, there will

[17] In a case nearly similar, provision is made by our laws, for defraying the expence of the necessaries so furnished, by a tax on the inhabitants of the infected places, and the country five miles round it.

[18] It would be easy, here, to shew what necessaries would be chiefly wanted in the infected place; what kind of food would be most proper; how they might be safely distributed, and how a correspondence might be kept up, as well with the secluded place, as among its inhabitants. But my intention, here, is only to point out a general plan, without entering into a minute detail of every particular. The police, most proper to be established in such infected places, will necessarily fall under the consideration of the Legislature, whensoever there may be reason to apprehend that the plague may be communicated to these kingdoms. This danger, I trust, is very remote; yet it is necessary to be always prepared against those calamities with which this disease has hitherto been attended.

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be soon found a number sufficient for this purpose of those who have already been seized with, and have recovered of, the distemper [19].

Thirdly, in order to prevent the pestilential contagion from being propagated from the infected to the sound, in secluded places, it seems necessary that the same preservative method should there be introduced, which, on similar occasions, has long been practised, with constant success, by the Europeans or Franks residing in the Turkish dominions, and in those of the states of Barbary.

For it is a fact universally known, that the ambassadors, consuls, merchants, of the several European nations, residing at Constantinople, and in other great cities of the Turkish empire, and in those of the Mahometan states of Africa, preserve themselves from pestilential infection, by shutting up the houses in which they dwell, and suffering no person to enter into, or go out from them, during all the time that the plague is epidemical in the places where they reside; at which time they receive such things as they want (with proper precautions) by the doors or windows of their houses. This preservative method has so long been established in those Eastern countries where the plague is a common disease, and has constantly been found so effectual, that it seems strange

[19] There are many instances of persons having several times been affected with the plague; but we are assured by Timone, that there are scarce any instances of persons labouring twice under the plague, in one year. So that in the lower class of people, there will be soon found enough, of those who have got through the distemper, to answer this end.

it should not, on the like occasions, have been brought into general use in any of the Christian states of Europe.

The discoveries that have lately been made concerning the nature of pestilential contagion, and the extent of its operations (or its sphere of action) will serve to explain the reasonableness and efficacy of this practice. We are assured by Doctor Mackenzie, from his observations on this disease, made at Smyrna and Constantinople, during thirty years practice of physic in those two cities, that "the plague is an infectious distemper communicated by contact, from one body to another; that is, to a sound from an infected one; and that the nearer, and more frequent the contact is, the greater is the danger of infection." His meaning he farther explains, by remarking, "that the ambient air is never the cause of the plague, but as it is the vehicle which conveys the venomous particles from one body to another; and that the person having the plague may be said to have a contagious and poisonous air in his room, and about him; while, at the same time, the open air is free from any dangerous exhalations; so that he never was afraid to go into a large house wherein a plaguy person lived, provided he was confined to one room [20]." According therefore to the opinion of this gentleman, founded on long experience, the pestilential contagion is judged to operate solely by contact; which contact need

[20] An account of the plague at Constantinople, in a letter to Sir James Porter, by Mordach Mackenzie, M. D. published in Phil. Trans. Vol. LIV.

not however be immediate between the sound and the morbid body; since, in order to produce infection, he esteems it sufficient that the contagious particles be conveyed from the one body to the other, through the medium of the air. Although he is not of opinion that the contagion is usually conveyed to any considerable distance in this manner; as he never was afraid of being infected, through this medium, by entering into a large house, in some room of which a person lay sick of the plague.

These observations of Doctor Mackenzie may perhaps receive some support from those of a noble lady, through whom the lives of many of our fellow subjects are daily preserved; who, in the same letter in which she so accurately describes the method of inoculating the small pox, as practised at Constantinople, with her usual sagacity, remarks, that the air (in Adrianople and other great towns of the Turkish empire) is never infected by the plague; and that it would be as easy to root it out of those countries, as out of Italy and France [21].

These general observations, concerning the nature of pestilential contagion, and its sphere of action, are further illustrated and confirmed by many well-attested facts, which we may collect from the account given by the Reverend Thomas Dawes, chaplain to the British factory at Aleppo, of a dreadful pestilence which raged in that place, in the year 1761, and 1762. He writes [22] that the plague, which had

[21] Lady Mary Wortley Montague, Letter xxxi.

[22] An account of the plague at Aleppo in the years 1761, and 1762, from Phil. Transf. for 1763, Vol. LIII.

only made a little progress in that city, during the year 1760, and had there lain dormant from the autumn, alarmed them greatly, by its appearance again in the latter end of March 1761. That the infection crept gently and gradually on; being confined chiefly to one particular quarter, till the beginning of May, when it began to spread visibly and universally; so that on the 27th of that month, the consul's house (where Mr. Dawes resided) was shut up; and their confinement therein lasted for ninety-six days (viz. till the last day of August). That the fury of the distemper did not indeed continue longer than the middle of July; and many of the British merchants went abroad, with caution, early in August; but as the consul had no urgent business to induce him to expose himself to any risk, he and his family remained in their close quarters until they could visit their friends with tolerable security. That though the violence of the distemper ceased in autumn, yet, contrary to usual custom, it continued during the whole winter. That in March following it spread again, and in April increased with such rapidity, that they were obliged to retire to their close quarters on the 26th of that month, and did not go abroad again until the 18th of August following; when the burials were reduced to about twenty a day; and gradually decreased till the middle of September; when the disease entirely ceased. That according to the best calculations, he supposes there might die at Aleppo in those two years about thirty three thousand persons of this disease; although, according to the eastern disposition to exaggerate, the natives swelled the account to forty, or sixty thousand each

each year. He further observes, that in the months of July and August, in each year (when the burials were from 200 to 300 every day) the noise of men singing before the corps, in the day time, and the shrieks of women for the dead, both day and night, were seldom out of his ears; and that, although after the custom of the East, they constantly lay during those months, and all the hot season of the year, in the open air, on the house-top; and that in each year the plague broke out in the two houses adjoining to that in which the British consul lived; and a Franciscan friar died of the disease in one of those houses, after two days illness, whose bed was only six yards distant from that of Mr. Dawes (both of their beds being placed near a wall eight feet high, by which the terraces of the two houses were separated;) and although (as before observed) several of the British merchants were so hardy as to converse abroad, after the violence of the disease was abated; yet the Consul, and all other British subjects, escaped infection in their houses; and only four or five Europeans of other nations died of the plague, in each year.

From all which facts, so well attested, we may deduce these important conclusions:

First, that pestilential contagion is not usually conveyed through the air to any considerable distance, so as to produce infection; but, where infection is thereby produced, it is commonly received by immediate contact with persons or goods, wherein it resides; or in morbid effluvia emitted into close rooms, or other places that are near to the persons or goods therewith infected.

Secondly,

Secondly, that those who dwell in houses near, or even contiguous to other houses that are infected with this contagion, may be preserved from it, if, according to the Eastern practice, they confine themselves close within their houses, and have no communication either with the persons, or with any other thing in which this contagion resides [23].

The truth of these conclusions not only appears from the above well-attested relations, but is also proved by various experiments made in this country, as well as in other parts of Europe. We learn from Doctor Mead [24] that, when the plague was last in England, in the year 1665, while it was in the

[23] These axioms, or conclusions, although they hold in most cases, I am not however authorized, by facts, to pronounce universally true, without exception. It is sufficient for our present purpose, that they hold true in all cases where the disease has not spread so far, through the infected place, as not to admit of any human means of preventing its farther progress. For where this disease is universally diffused through the infected places, and is attended with those shocking distresses so often recorded in history; when (as lately at Marseilles and Messina) the sick are deserted, and the dead remain unburied; when all distinction ceases, and government is dissolved; the case is then desperate, and must be left to Providence. The disease will at length be extinguished, either by the coldness of the season, in this our climate; or for want of fresh subjects to receive, and to convey the contagion from one to another. With regard therefore to the preservative method here proposed, it seems a question merely speculative, whether, when the disease is arrived at such a height as in the last mentioned case, the air is so contaminated with contagion, as to be infectious to those who are in the open streets, or on the house-tops, or close shut up in houses? It remains for the wisdom of the Legislature to establish such laws as shall be judged most effectual for averting so great an evil.

[24] Discourse on the plague, edit. 3. p. 18.

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town of Cambridge, the colleges remained entirely free, by being shut up from all communication with such as might be suspected of giving them the disease [25]. In the plague at Rome, in the years 1656 and 1657, the monasteries and nunneries, for the most part, defended themselves from infection by the same means: whereas, at Naples, where the plague was a little before, these religious houses, from their neglect herein, did not escape so well. Even the prisons at Rome, though close and noisome, were free from this infection. So that there remains no doubt, that this salutary practice of seclusion, if carefully observed, will every where be found effectual in preventing the communication of contagion, and in preserving the families so shut up from the distemper.

In order therefore to prevent this dreaded disease from being propagated to those who remain free from it, in places so inclosed, it seems necessary that, agreeable to the method so long and successfully practised in the East, every house in such inclosed places, not visited with the disease, should immediately be shut up, so as that all communication may be cut off, between the houses that remain free from contagion, and those that are infected therewith.

All the preservative methods against the distemper that have hitherto been put in practice, are founded on a separation of the infected from the sound.

[25] A plan which reflects great honour on the chief members of the learned body by whom it was concerted; and, more especially on the Vice-Chancellor of that university, by whom, agreeable to our laws, it must have been carried into execution.

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That which is here proposed for preventing the spreading of contagion in places so shut up, seems liable to the fewest objections [26]. For by long

[26] In some cases, indeed, as in small towns, and villages, and even in large cities, on the first appearance of the disease, in a few families only, it may be sufficient, after the place has been duly invested, to separate the sick from the sound in the infected houses, and both from the rest of the community; agreeable to what has been practised with success on some occasions. In cases of great danger of this disease being communicated to any part of these kingdoms, it has been usual to provide for the public health, by intrusting certain powers to his majesty; to be exercised, for a time limited, with the advice of his council, as occasion should require. And if in any future time such danger shall occur, it may not perhaps be judged improper to empower his Majesty, to take such measures for the safety of the people shut up in such infected places, and for eradicating the pestilence, as, with the advice of his council, shall be judged most proper; respect being had to the extent of the place, the number of its inhabitants, its situation with regard to other places near it, the season of the year, and various other circumstances on account of which the methods to be pursued ought to vary. And in all these cases, this most burthenfome task might possibly be rendered more easy, by the establishment of a Board of Health; to advise, when required; to make due inquiries; to receive intelligence; and, in many cases, to assist in the execution of such orders as shall be made by his Majesty in council. Commissioners of health have long been established in all the Italian states, in Portugal, in Spain, in Sweden, and even among the Cantons of Switzerland. An establishment of this sort hath often been recommended. And certainly in this warlike and commercial nation, whose armies and navies are employed in all quarters of the world; whose subjects carry on a traffic with every known part of the globe; whose colonies, factories, and other commercial settlements, are so numerous; whose people are daily wasted by the intemperance and by the diseases of every climate; and (let me add) whose domestic police, with regard to many nuisances in great cities, and near them, the adulteration of many kinds of provisions, and various other experience

experience, repeated often in many parts of the world, it has been fully proved effectual. Moreover, in all well-regulated societies [27], it may easily be carried into execution; being in itself so well suited to the inclinations and desires of all mankind, that by a sort of natural instinct they fly from this contagion, even at the hazard of life, when the means are in their power: or where they cannot remove from the place infected, or find it safer to continue there than to go to other places, they voluntarily submit to close confinement, so soon as they are sensible that thereby they secure themselves from danger. On the contrary, we find nature to combat strongly against the practice of secluding the sick, as by our laws prescribed. Made desperate by their afflictions, and unable to act with calm judgment, they

particulars respecting the public health, requires to be put under better regulations: on all these accounts, an establishment of this kind seems more wanted here than in most other countries.

[27] War, famine, and pestilence, often succeed each other. By each of these the peace and good order of society is disturbed: but where they all unite, it seems scarce possible to guard against their destructive effects. Where famine prevails, the method of seclusion cannot take place; and though famine itself does not produce the true plague, yet it often brings on diseases equally destructive; as was lately experienced at Naples. In war, armies may be driven into infected places, or forced to march near them; and, through necessity, be obliged to carry the disease from one place to another. It is therefore to be feared, that although during the present cold season, a check is put to this destructive distemper in Poland, yet it may there make greater advances towards the approach of summer; especially, as the civil commotions in that kingdom render it still more difficult to take the necessary precautions against its further progress.

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seldom submit willingly, to restraints imposed on them merely for the good of the public; but more frequently esteem confinement, either in their own houses or in hospitals [28], a grievous addition to their sufferings; and by a concealment of the disease, or by flight when infected, and other irregularities, have often been found to spread the contagion wider than they would have done, had they been left at full liberty. But the seclusion of the sound, as here proposed, is not attended with any of these inconveniences. Every individual, out of a principle of self-preservation, the strongest of all ties, will think it better to trust for his security to means that are in his own power, than to those extorted from others who may not be particularly interested in his welfare. Besides, the regulation here proposed commands observance under the double sanction of the rewards and punishments which it naturally brings along with it. On the one hand, by security against the most imminent danger, in conforming thereto; and under

[28] In some of the preceding centuries, when the plague was common in our metropolis, as it now is in several of the great cities of the Turkish empire, pesthouses, or hospitals for that disease were there in common use. But the forcible carrying of the sick into these, does not appear to have been attended with greater advantage to the public, than the forcible shutting them up in their own houses. And when, in the year 1720, the King was impowered to erect lazarettos, huts, or sheds, for the indiscriminate reception of persons, of all ranks and conditions, seized with this disease, the inhabitants of the capital expressed such uneasiness thereat, especially when they understood that it had been proposed to erect these lazarettos or hospitals no nearer than three miles to any great city, that the Legislature, on more mature deliberation, revoked these powers in the next session of parliament.

the penalty of receiving this dreaded malady, by its transgression. And, if these inducements should not be sufficient, a due observance of this regulation may, if judged necessary, be further enforced by civil punishments.

If the above precautions be taken for the preservation of those who happen to be shut up in infected places, it does not seem necessary that the houses visited with the plague should also be shut up. Free access should there be given to all proper assistants. And those who remain in such houses, free from the disease, may be allowed to go abroad at stated times of the day, as occasions require. Such of them as can be spared from attending the sick, and are desirous of avoiding the infection, may, if they so choose, be removed to other houses, or asylums, provided for their reception [29]. When the sick are recovered, they may be usefully employed in administering to others, under the same disease; and the houses [30],

[29] Children, more especially, may so be preserved from infection.

[30] It is certainly more adviseable to canton the sick, by small numbers, in private houses, than to have them pent up in large hospitals; it being known from experience, that persons labouring under such acute diseases have little chance of recovering from them in the poisonous heated air of such noisy crowded places; and that those pesthouses become grand seminaries of the strongest contagion, the effects of which few can escape who enter them; which contagion may sometimes be diffused to a considerable distance from these its receptacles. The truth of this may be illustrated by what is observed in another disease that is nearly related to the true pestilence. I have had occasion to visit great numbers labouring under the putrid jail-fever, in its most malignant state; particularly, part of a regiment of soldiers, who were put into transport ships at Dublin, to be conveyed from thence to Parkgate near Chester,

in which they dwell, may very advantageously be set apart, for the use of such as happen to be seized with the distemper, either in the secluded houses, or

and, the passage being short, were crowded into the holds of coal-ships, where they were wretchedly accommodated. But the winds proving contrary, they lay several weeks, in the harbour of Dublin, in this crowded state; being not suffered to go on shore, for fear of desertion; and afterwards were tossed about long at sea, in such tempestuous weather, as seldom allowed the hatches of the ships to be kept open, to give them air. They thus contracted the jail-fever; and while they were in this state, two of the ships in which they were embarked, were forced into Whitehaven in great distress. The soldiers were immediately taken out, and billeted upon the public houses; about fifty of them being then sick of this fever. But as they were attended with care, and kept separate in airy rooms, though many of them died, yet the contagion did not spread; neither was I, nor any other who visited them, affected with the disease. It happened quite otherwise on another occasion; when, in the year 1757, a sloop of war was sent to protect the trade carried on to Dublin and other parts of Ireland, from the seaports of Cumberland. This sloop had been hastily manned from a guardship at the Nore; from which ship some of the seamen had brought this infectious disorder, with which most of them were seized before they arrived at Whitehaven. As the law does not authorize the quartering of seamen on public houses, a small house that happened to be empty was hired to serve them as an hospital. In this hospital I was desired to visit them, once, to give general directions about their health, and to certify the state in which I found them to the Lords of the Admiralty. The appearance, I must own, alarmed me: about forty of them were lying on the floors of three small rooms, very close to each other, many of them in a dying state. The heat of the weather (it being in the month of May) gave force to the contagion. Seven days after, I was seized with this fever, and narrowly escaped with life. The surgeon who attended them died of it; his mate recovered with difficulty from it. From this seminary of contagion the disease spread through the town of Whitehaven; two other surgeons, among many others there,

the asylums, or among those who minister to the sick, or have the charge of the infected place, and superintend the due execution of the laws [31]. As to these last, and all those who are employed about the sick, it is necessary that they should dwell separate from the rest of the inhabitants; and that some public edifices should be allotted to them, together with some of the houses adjacent to the infected place, if they should be required for their use; or for store-houses, or for other occasions of the inhabitants.

The method of treatment of persons of all ranks, in infected places, whether in sickness or in health, as here proposed, will be found perfectly agreeable to

died of it. From thence it was communicated to the neighbouring sea-port of Workington; and, in the summer following, to the town of Cockermouth, where it proved fatal to two surgeons. It disappeared in this last place during the winter; and again broke out there in the summer following, but with milder symptoms than before.

[31] It does not seem probable that pestilential contagion ever kills instantaneously, as some have supposed. There is reason to conclude, that, like the variolous contagion, it must operate some time on the human body before it produces the disease; and that the disease, when so produced, must run on, for some considerable time, before it produces that putrid state of the humours which renders them contagious. And it is found by experience, that infection may be avoided, if the healthy are separated from the sick, towards the beginning of this fever. The different periods from infection to the fever, and from the beginning of the fever again to contagion, are pretty well marked out in the small-pox; so that, on the fourth, and even so late as the fifth day of that disease, in order to avoid infection, I have frequently advised the sound to be removed into houses separate from the sick, and at other times, the sick from the sound; and always with success.

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the principles of charity and humanity : for it is apparently well calculated for the relief of the poor, who commonly suffer most from this distemper. Persons in their situation have not the means of flying from contagion, should such flight be permitted; so that, at all events, they are constrained by necessity to remain in infected places; where, if without care, or trouble, they have every necessary provided for them that their situation requires, no more can be desired by them. This method may also prove equally beneficial to those in more opulent circumstances. In such a state of seclusion, they may be accommodated with conveniences suitable to their rank; and there is reason to believe that the danger would be increased, rather than lessened, by their removal from such places, were the means in their power. Such a removal of large families might in many cases be inconvenient; in others, scarce practicable. Besides, it hath heretofore been experienced, that when a general migration was allowed, as from London, in the last plague, those who fled were often as much exposed to the danger of infection, in the inns on the public roads, as those were who remained in their own houses. And so apprehensive were the people every where of the danger of infection, that many of those emigrants found it almost impracticable to accommodate themselves with lodgings and other necessaries; and, after all, were not wholly exempt from the danger of the disease; since, by these emigrants, it was extended into half the counties of England. But it can scarce be expected, that, on similar occasions, the Legislature would again remain calm spectators of the destruction
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of people, by such migrations as then took place; by which half the counties of England became a prey to the distemper. It is more reasonable to suppose, that, if it should please the Almighty again to suffer this nation to be visited with the like calamity, none would be permitted to stir, even from the neighbourhood of infected places, without proper bills of health; and that the militia of the counties near to such places, or other watchmen, would be posted in proper stations, in order to prevent all persons from travelling without such passports. However this may be, and whether the method of seclusion here proposed for preventing the spreading of contagion in infected places, shall, or shall not be established, in any country, by legal authority; the advantages thereof seem sufficiently explained to induce many private families to put it in practice, in places where this disease shall appear. And wheresoever this, or any other preservatory method against contagion is brought into use, the benefits thereof, when ascertained, and made public, must be extended to many nations.

The fourth intention, of eradicating the contagion in infected places, will be fully answered by a successful execution of the means above proposed, or of any other means more effectual for preventing its communication from one to another. For the plague is truly an exotic disease, proceeding from a particular kind of contagion, which does not appear, in any one instance, to have been originally generated in this part of the world; but, at various times, has been imported into this, and other parts of Europe, chiefly by war and commerce. This contagion therefore, which is the cause of the disease, exists
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here solely by a continued propagation from one to another; and its effects must cease, so soon as there remains no fit subject for it to act upon, and to continue its propagation.

When therefore it shall appear, on the strictest inquiry, that by means of the regulations here proposed, or others more proper, this distemper has ceased in the infected place; and that all contagion has from thence been removed, by a thorough purification of the persons, goods, and houses, that were infected; it then only remains to open a free communication with that place, so soon as shall be judged consistent with the safety of the public.



E R R A T A.

Page	3	notes, line	25	for <i>nor</i> read <i>not</i> .
	5	notes, line	1	for <i>confederacy</i> read <i>confederacy</i> .
		ditto, line	14	for <i>hills</i> read <i>bills</i> .
	7	notes, line	3	for <i>or</i> read <i>of</i> .
	8	notes, line	6	for <i>greater</i> read <i>great</i> .
		ditto, line	13	for <i>happens</i> read <i>happen</i> .
	12	text, line	14	for <i>wherein</i> read <i>whereon</i> .
		notes, line	8	for <i>and</i> read <i>are</i> .
	14	note, last line		for <i>Timani</i> read <i>Timone</i> .
	15	notes, line	2	for <i>brought</i> read <i>brought</i> .